Deaths from Enteric Bacterial Pathogens: A Chart Review of Deaths Identified in the Foodborne Diseases Active Surveillance Network (FoodNet), 1996

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Background: Precise mortality estimates from foodborne bacterial pathogens and whether these pathogens contributed directly to deaths have not been well defined.

Methods: We conducted active population-based surveillance for confirmed cases of *Campylobacter*, *Escherichia coli* O157:H7 , *Listeria*, *Salmonella*, *Shigella*, Vibrio, and Yersinia infections through CDC's Emerging Infectious Diseases FoodNet in California, Connecticut, Georgia, Minnesota, and Oregon (surveillance population=13,221,077). We reviewed hospital records of patients who died with these infections.

Results: We identified 7322 culture-confirmed cases (55/100,000 persons/year) and 34 associated deaths. Among deaths, 16 (47%) were associated with salmonellosis (case fatality rate [CFR] = 0.8%), nine (26%) with *Listeriosis* (CFR=14%), four (12%) with *Campylobacter*iosis (CFR=0.1%), two (6%) with *E. coli* O157:H7 infection (CFR=0.5%), two (6%) with shigellosis (CFR=0.2%), and one (3%) with vibriosis (CFR=5%). Samples cultured were blood from 20 (59%) patients; stool from 11 (32%); cerebrospinal fluid from three (9%); and peritoneal fluid from two (6%). Patients' median age was 63.5 years (range 2-89 years); 62% were male. Fatal cases were more likely to occur in adults than were non-fatal cases (relative risk=8.2; 95% confidence interval=3.4, 19.8). Among 27 available charts, prehospitalization characteristics included serious pre-existing illness in 20/27 (75%) patients, recent antibiotic therapy for 11/25 (44%), and corticosteroid therapy for 7/27 (26%). We judged that foodborne pathogens directly contributed to death of 25 (93%) of these patients.

Conclusions: 1996 FoodNet data indicate that foodborne bacterial pathogens account for significant morbidity and mortality, and directly contributed to death in persons with culture-confirmed disease. Deaths occurred primarily among adults with serious underlying disease; salmonellosis accounted for nearly half of deaths. Targeting high risk groups with food safety measures may prevent fatal infections from foodborne pathogens.

Suggested citation:

Villar R, Bardsley M, Reddy S, Fiorentino T, Wicklund J, McGivern T, Vugia D, Swerdlow D, and FoodNet. Deaths from Enteric Bacterial Pathogens: A Chart Review of Deaths Identified in the Foodborne Diseases Active Surveillance Network (FoodNet), 1996. 1st International Conference on Emerging Infectious Diseases. Atlanta, GA, March 1998.